

Amendments to the Claims

The following claim listing replaces all previous claim listings in this application:

1. (Currently Amended). A method of label selection for end-to-end transport of label switched traffic through a communications network between a source node and a destination node, the method comprising the steps of:

a) launching a request message toward the destination node from the source node, the request message including ~~an initial~~ label availability indication indicative of ~~respective~~ ~~corresponding~~ labels available for use by the source node;

b) extracting the label availability indication from the request message; and

c) analyzing a comparing the received label availability indication with a label availability table indicative of labels available for a, from a preceding hop, at each successive hop between the source node and the destination node of labels available for use by each respective hop, to produce an end-to-end label availability indication;

whereby the end-to-end label availability indication is indicative of respective corresponding labels available for end-to-end transport of label switched traffic between the source node and the destination node;

wherein the communications network uses wave division multiplexing (WDM) for transport of said label switched traffic, the label switched traffic being associated with labels for use in switching the traffic between the source node and the destination node, each label identifying a respective data transport wavelength.

2. (Canceled).

3. (Original). A method as claimed in claim 1, wherein the label switched traffic includes multi-protocol label switched (MPLS) traffic.

4. (Currently Amended). A method as claimed in claim 1 wherein ~~the step of analyzing the received label availability indication~~ said comparing further comprises; at each successive hop toward the destination node, ~~a step of intersecting the received label availability indication with a set of label identifiers indicative of labels available for use over the hop.~~

5. (Currently Amended). A method as claimed in claim 4, further comprising; at each successive hop toward the destination node, ~~a step of sending a request rejection message to the source node if the end-to-end label availability indication is empty.~~

6. (Currently Amended). A method as claimed in claim 1, further comprising;
if the end-to-end label availability indication included with the request message received by the destination node contains at least one label identifier, ~~the step of:~~

a) selecting one of the label identifiers from the end-to-end label availability indication;
and

b) setting up an end-to-end label switched path between the source node and the destination node using the respective label corresponding to the selected label identifier.

7. (Original). A method as claimed in claim 6, wherein the one of the label identifiers is selected at random.

8. (Currently Amended). A method as claimed in claim 6, wherein ~~the step of said~~ setting up ~~an end-to-end label switched path~~ further comprises: ~~a step of~~ sending a mapping message containing the selected label identifier from the destination node toward the source node, the mapping message retracting the path traversed by the request message.

9. (Currently Amended). A method as claimed in claim 8, further comprising: upon receipt of the mapping message at each hop, ~~a step of~~ assigning the label to the end-to-end label switched path if the label corresponding to the selected label identifier is still available for use by the hop.

10. (Currently Amended). A method as claimed in claim 8, further comprising: upon receipt of the mapping message at each hop, ~~a step of~~ sending a mapping failure message to the destination node if the label corresponding to the selected label identifier is not available for use by the hop.

11. (Currently Amended). A method as claimed in claim 10, further comprising:
upon receipt of the mapping failure message by the destination node, ~~the steps of:~~
a) revising the end-to-end label availability indication by removing the selected label identifier;

b) if the end-to-end label availability indication is empty, sending a request rejection message to the source node; and

c) if the ~~reduced label list~~ end-to-end label availability indication contains at least one label identifier:

i) selecting a new label identifier from the end-to-end label availability indication;
and

ii) setting up an end-to-end label switched path between the source node and the destination node using the respective label corresponding to the selected label identifier.

12. (Currently Amended). A communications network for label selection for end-to-end transport of label switched traffic through the communications network, the communications network comprising:

a) a source node adapted to launch a request message toward a destination node, the request message including ~~an initial~~ label availability indication indicative of ~~respective corresponding~~ labels available for use by the source node, wherein the label availability indication is configured to be extracted from the request message; and

b) ~~at least one~~ a hop intermediate between the source node and the destination node and configured to serve an intermediate node between the source node and the destination node, wherein the ~~each hop comprising a respective intermediate node is adapted to revise a compare~~ the received label availability indication with a label availability table indicative of labels available for the, from a preceding hop, based on labels available for use by the respective hop, to produce an end-to-end label availability indication;

wherein the communications network uses wave division multiplexing (WDM) for transport of said label switched traffic, the label switched traffic being associated with labels for use in switching the traffic between the source node and the destination node, each label identifying a respective data transport wavelength.

13. Canceled.

14. (Original). A communications network as claimed in claim 12, wherein the label switched traffic includes multi-protocol label switched (MPLS) traffic.

15. (Currently Amended). A communications network as claimed in claim 12, wherein ~~each~~ the intermediate node is further adapted to ~~revise~~ compare the ~~received~~ label availability indication by intersecting the ~~received~~ label availability indication with a set of label identifiers indicative of labels available for use over the ~~respective~~ hop.

16. (Currently Amended). A communications network as claimed in claim 15, wherein ~~each~~ the intermediate node is further adapted to send a request rejection message to the source node if the end-to-end label availability indication is empty.

17. (Previously Presented). A communications network as claimed in claim 12, wherein, upon receipt of the request message, if the end-to-end label availability indication contains at least one label identifier, the destination node is adapted to:

- a) select one of the label identifier from the end-to-end label availability indication; and
- b) set up an end-to-end label switched path between the source node and the destination node using the respective label corresponding to the selected label identifier.

18. (Original). A communications network as claimed in claim 17, wherein the destination node is adapted to set up an end-to-end label switched path by sending a mapping message containing the selected label identifier toward the source node, the mapping message retracing the path traversed by the request message.

19. (Currently Amended). A communications network as claimed in claim 18, wherein ~~each~~the intermediate node is responsive to reception of the mapping message to assign the label corresponding to the selected label identifier to the end-to-end label switched path if the label is still available for use by the ~~respective~~-hop.

20. (Currently Amended). A communications network as claimed in claim 18, wherein ~~each~~the intermediate node is responsive to reception of the mapping message to send a mapping failure message to the destination node if the label corresponding to the selected label identifier is not available for use by the ~~receptive~~-hop.

21. (Previously Presented). A communications network as claimed in claim 20, wherein the destination node is responsive to reception of the mapping failure message to:

- a) revise the end-to-end label availability indication by removing the selected label identifier;
- b) if the end-to-end label availability indication is empty, send a request rejection message to the source node; and
- c) if the end-to-end label availability indication contains at least one label identifier:
 - i) select a new label identifier from the end-to-end label availability indication; and
 - ii) set up an end-to-end- label switched path between the source node and the destination node using the respective label corresponding to the selected label identifier.

22. (Currently Amended). An intermediate node of a communications network adapted for end-to-end transport of label switched traffic through the communications network between a source node and a destination node, the intermediate node comprising:

- a) ~~an initial~~ label availability indication indicative of labels available for conveying label switched traffic through a respective communications link connected to the intermediate node;
- b) a buffer adapted to receive a request message propagated through the communications network from the source node, the request message including a ~~received~~ label availability indicator indicative of labels available for conveying label switched traffic between the source node and the intermediate node;
- c) a processor adapted to ~~analyze~~ extract the label availability indication from the request message and compare the extracted label availability indication with the received request

~~message and a label availability table indicative of labels available for the respective~~
communications link to produce an intermediate label availability indication; and

wherein the communications network uses wave division multiplexing (WDM) for transport of said label switched traffic, the label switched traffic being associated with labels for use in switching the traffic between the source node and the destination node, each label identifying a respective data transport wavelength.

23. (Currently Amended). An intermediate node as claimed in claim 22, wherein the processor is adapted to ~~analyze~~ compare the ~~received~~ request message by intersecting the ~~received~~ label availability indicator with the ~~initial~~ label availability indication.

24. (Original). An intermediate node as claimed in claim 22, further comprising means for assigning a label to an end-to-end path between the source node and the destination node in response to a mapping message received from the destination node, the mapping message containing a label identifier corresponding to the label.

25. (Original). An intermediate node as claimed in claim 22, further comprising means for sending a mapping failure message to the destination node in response to a mapping message received from the destination node containing a label identifier corresponding to a label that is not available for converting label switched traffic.

26. (Currently Amended). An intermediate node as claimed in claim 22, wherein the intermediate label availability indication ~~comprises~~ includes available labels for conveying label switched traffic, and the intermediate node further comprising means for sending a request rejection message to the source node if the intermediate label availability indication is empty.

27. (Canceled)

28. (Canceled)